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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/653,679	09/02/2003	Ali S. Khayrallah	4015-5091	4596

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COATS & BENNETT, PLLC
1400 Crescent Green, Suite 300
Cary, NC 27518

EXAMINER	
KIM, KEVIN	

ART UNIT	PAPER NUMBER
2611	

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04/22/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/653,679	KHAYRALLAH ET AL.	
	Examiner	Art Unit	
	Kevin Y. Kim	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 February 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,4 and 6-93* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1,3,4 and 6-19* is/are allowed.

6)☒ Claim(s) *20-22,25,26,48-50,53-56,66,67,72,73,78,79,86 and 87* is/are rejected.

7)☒ Claim(s) *23,24,27-47,51,52,57-65,68-71,74-77,80-85,88-93* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2-25-08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on February 25, 2008 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 20-22,25,26,48-50,53-56,66,67,78,79,86 and 87 are rejected under 35 U.S.C. 102(b) as being anticiapted by Tran (EP 9 932 263 A2, submitted by applicant).

Claim 20.

Tran discloses a method of finger placement in a RAKE receiver comprising:

receiving a composite signal that includes one or more signal images (see para.[0004]);

generating a multipath delay profile for the composite signal based on a searcher delay grid (e.g., 1/2 chip resolution) defined within a search window (see para.[0015]);

defining a finger placement grid (1/4 or 1/8 chip) for positioning fingers of the RAKE receiver within the search window that is independent of the searcher delay grid (see para. [0027]); and

placing at least one finger of the RAKE receiver on a grid point of the finger placement grid based on evaluating the multipath delay profile (see para.[0028]).

Claim 21.

Tran further teaches generating a power/delay profile (PDP) for the composite signal. See para. [0026].

Claim 22.

The finger placement grid (1/4 or 1/8 chip) for positioning fingers of the RAKE receiver within the search window is smaller than the searcher delay grid (1/2 chip).

Claim 25.

The plurality of spaced apart delay points (1/4 or 1/8 chip) within at least a portion of the search window have a grid resolution based on a Nyquist value (1/chip) associated with the composite signal.

Claim 26.

1/4 or 1/8 chip which is a plurality of spaced apart delay points within at least a portion of the search window defining sub-chip spaced grid points within the search window.

Claim 48.

Tran discloses a receiver (see Fig.1) comprising:

a searcher (18) to generate a multipath delay profile based on a searcher delay grid for a received signal that includes one or more signal images;

a RAKE receiver (16) to generate a despread signal by despreading the received signal, the RAKE receiver comprising:

a plurality of fingers to despread received signals at different signal delays; and

a logic circuit (20) to assign one or more fingers of the RAKE receiver to grid points of one or more finger placement grids based on the multipath delay profile, said one or more finger placement grids (1/4, 1/8 chip) being defined independently from the searcher delay grid (1/2 chip). See para. [0027]).

Claim 49.

Tran further teaches generating a power/delay profile (PDP) for the composite signal. See para. [0026].

Claim 50.

The RAKE receiver is configured to define a finger placement grid comprising a plurality of grid points that span at least a portion of the multipath delay profile but that is independent of measurement points comprising the multipath delay profile. Note that the finger placement grid (1/4 or 1/8 chip) for positioning fingers of the RAKE receiver within the search window is smaller than the searcher delay grid (1/2 chip).

Claim 53.

Tran teaches that the receiver comprises a radio front-end (14) to receive a transmitted signal and to provide the received signal as a baseband signal by downconverting the transmitted signal.

Claim 54.

Tran teaches a demodulator (92) to recover transmitted information from the despread received signal output by the RAKE receiver.

Claim 55.

Since the receiver processes a CDMA wireless communication signal it comprises a portion of a wireless communication device.

Claim 56.

It is well established that the logic circuit of a RAKE receiver comprises at least a portion of an Integrated Circuit(IC).

Claim 66.

The logic circuit (8) comprises a processor circuit in order to process finger assignment.

Claim 67.

Tran shows that the RAKE receiver comprises a Generalized RAKE (G-RAKE) receiver.

Claims 78 and 86.

Trans shows a mobile terminal/base staion comprising:

a transmitter (not shown but inherent for two-way communication in the CDMA system) to transmit wireless signals; and

a receiver (see Fig.1) to receive wireless signals, said receiver comprising a RAKE receiver configured to:

generate a finger placement grid (1/4 or 1/8 chi) that is independent of a searcher grid (1/2 chip) used to generate a multipath delay profile for a received signal;

evaluate one or more grid points of the finger placement grid based on the multipath delay profilel to identify one or more selected grid points of the finger placement grid; and assign delay settings of one or more fingers of the RAKE receiver corresponding to the one or more selected grid points.

See paragraphs [0027] and [0028].

Claims 79 and 87.

1/4 or 1/8 chip resolution as a plurality of uniformly spaced delay positions spans at least a portion of the multipath delay profile.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 72 and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tran (EP 9 932 263 A2, submitted by applicant) in view of Terao (US 7,039,097).

Tran discloses a method and apparatus to

evaluate a multipath delay profile comprising a plurality of measurement values for a received signal taken at corresponding measurement points;

define a finger placement grid comprising a plurality of grid points that span at least a portion of the multipath delay profile and that are independently spaced apart relative to the measurement points of the multipath delay profile; and

determine delay assignments for one or more fingers of a RAKE receiver corresponding to one or more selected grid points of the finger placement grid based on evaluating the multipath delay profile, as explained in connection with claims 20 and 49 above.

Tran fails to teach the method implemented on a computer-readable media comprising instructions to instruct a processor to perform the method.

Tarao teaches a computer readable medium comprising instructions to instruct a processor to perform allocation of fingers in a Rake receiver in the same field of endeavor. See col.10:36-47. Thus, it would have been obvious to one skilled in the art at the time the invention was made to provide a computer-readable media comprising instructions to instruct a processor to perform the method of Trans as taught by Tarao.

Claim 73.

Para.[0028] teaches tuning the finger placement grid by aligning at least one grid point of the finger placement grid with at least one measurement point of the multipath delay profile.

Allowable Subject Matter

7. Claims 1,3,4,6-19 are allowed.

8. Claims 23,24,27-47,51,52,57-65,68-71,74-77,80-85,88-93 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y. Kim whose telephone number is 571-272-3039. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu can be reached on 571-272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kevin Y Kim/
Primary Examiner, Art Unit 2611